

WHAT I CLAIM MY INVENTION IS:

- [41] 1. Controlled heating air space is designed to retain heated air in an isolated area adjacent to an automobile windshield; thus said temperature of said controlled heating air space can be maintained independently without interfering normal temperature inside automobile passenger compartment.
- [42] 2. Windshield heating air appliances and dashboard air vent cover are made of transparent plastic or other transparent materials; said windshield heating air appliance can be consisted of two symmetric parts which are joined together during the installation to facilitate shipping; said windshield heating air appliance, said windshield and either said dashboard or said dashboard air vent cover assemble said controlled heating air space in accordance with claim 1.
- [43] 3. Utilizing heated air supply from said dashboard air vents, said controlled heating air space in accordance with claim 1, maintains said windshield surface at an optimal temperature, adjacent air in contact with said heated windshield surface no longer reduces its ability to retain moisture; thus prevents fogging of said windshield, guarantees an excellent driving visibility through said windshield, reduces traffic accidents in a wet or cold climate.
- [44] 4. Said controlled heating air space in accordance with claim 1 consumes less than 2% of said automobile passenger compartment, melting ice accumulated on said windshield requires only to heat up said controlled heating air space instead of said entire automobile passenger compartment; thus significantly increases the heating efficiency, speeds up ice melting, saves energy and reduces pollution.
- [45] 5. A side window cover is made of transparent plastic or other transparent material; since air is a poor thermal conductor, air temperature between a side window and side window cover is higher than said side window temperature in a wet or cold climate; thus, an additional insulation layer, formed by said side window cover and air between said side window and side window cover, enhances said side window insulation, keeps said side window cover temperature close to an automobile internal air temperature, therefore, significantly reduces fogging of said side window, enhances driving safety in a wet or cold climate.

[46] 6.A windshield-tinting device contains a rotatable core, said rotatable core is portable, and contains a roll of windshield-tinting plastic, said windshield-tinting plastic has a hard handle attached at its end; to deploy said windshield-tinting device, said hard handle needs to be pulled out and locked into handle holders attached on a windshield heating air appliance; to put away said windshield-tinting device, release said hard handle from said handle holders, said windshield-tinting plastic will be automatically rotated back into said rotatable core; said windshield heating air appliance can be equipped with said windshield-tinting devices to provide a driver alternative sunlight protection.